XCP SMB v1.1.1 Migration Tool

Release Notes

NetApp
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Abstract

This document references updates for XCP SMB v1.1.1 and how the new enhancements can be leveraged by NetApp Professional Services consultants, partners, and customers for successful NetApp® ONTAP® storage adoption.

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1 What Is XCP SMB v1.1.1?

The NetApp XCP SMB migration tool is a SMB host tool for fast and reliable third-party storage to NetApp migrations and NetApp to NetApp transitions. The tool also supports discovery, reporting, and a wide variety of sources and targets.

XCP SMB runs on a Windows host as a command-line tool. It is packaged as a single binary file that is easy to deploy and use. Users need to download and copy the binary on a supported Windows distribution.

XCP SMB has eight commands: `help`, `license`, `activate`, `show`, `scan`, `copy`, `sync`, and `verify`.

1.1 XCP SMB v1.1.1 Enhancement

XCP SMB v1.1.1 has the following bug fixes.

Issue: XCP memory leak during filesystem scan.

Issue: “XCP sync” is trying to copy junctions / symlinks which results into permission denied error instead of skipping them.

1.2 XCP SMB v1.1 Enhancement

XCP SMB v1.1 has the following feature improvement and bug fixes:

Feature:

If the user running XCP is having `SeBackupPrivilege`, XCP will bypass Window’s security and copy files in backup mode. This privilege causes the system to grant all read access control to any file, regardless of the access control list (ACL) specified for the file.

Bug Fixes:

Issue: Log entries sent from child processes are not propagated and do not reach the log file and the console.

Solution: Use a different configuration for processing log entries arriving from child processes.

Issue: If XCP encounters a file’s `ctime` or `mtime` set to before 1970 while scanning, XCP will crash while trying to aggregate it under the correct bucket.

Solution: Since 1970 is the epoch start, any `ctime` or `mtime` before 1970 will be aggregated to a bucket named “invalid”.

Issue: While deleting directories on target, XCP could get into a race condition if a deletion request is for a subdirectory of another deletion request.

Solution: Synchronize deletion requests to avoid race conditions.

1.3 XCP SMB/CIFS v1.0.1 Enhancement

The following bug fix is related to fatal error while executing the show command:

Issue: When printing share permissions with show command, XCP crashes when it encounters an SID for a user that no longer exists in Active Directory.

Solution: When SID lookup in Active Directory fails, display the SID value instead of the object name when printing permissions.

1.4 XCP SMB/CIFS v1.0 Features

XCP SMB/CIFS v1.0 runs on a Windows client as a command-line tool. XCP SMB/CIFS is packaged as a single binary file that is easy to deploy and use.

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Table 1 lists the XCP SMB/CIFS v1.0 features.

Table 1) XCP SMB/CIFS v1.0 features.

Feature	Description
Core engine innovations	Based on the latest and greatest technology asynchronous and parallel computing
“help”	Displays detailed information about available options for each XCP command
“show”	Requests information from host about SMB shares
“activate”	Activates XCP license on Windows host system
“scan”	Read all files and directories found on a SMB share
“copy”	Recursively copies everything from source to destination
“sync”	Scans the source and target in parallel and updates the target with all the modifications from the source
“verify”	Performs three levels of verification to make sure that the target is the same as the source
License management portal	Several types of renewable free licenses are available with options for connected and offline environments

1.5 Prerequisites

XCP SMB uses Windows client host systems to generate parallel I/O streams and fully utilize available network and storage performance. To support XCP SMB, each Windows client host requires:

- Windows 2008 R2 or above
- 64-bit Intel or AMD server, minimum 4 cores and 8GB RAM
- The Source storage system, XCP host, and the target ONTAP system must be part of same Active Directory domain
- 20MB of disk space for the XCP binary and at least 50MB of disk space for the logs that are stored in the C:\NetApp\XCP directory
- Microsoft Visual C++ 2017 redistributable must be installed on the XCP host. The download link is here
- User login requirement:
  - **XCP host system:** The user must have administrator privilege (user must be part of "BUILTIN\Administrators" group on the XCP SMB host system)
  - **Target storage system:** The user must have read and write access
  - **Source storage system:**
    - If the user is part of “Backup Operators” group in source storage system, the members of this group can read files while bypassing the security rules, regardless of any permissions that protect those files.
    - If the user is not part of “Backup Operators” group in source system, the user must have read access.

  Note: Write permission is required in source storage system for supporting the XCP option “-preserve-atime”.

2 Features Not Supported

XCP SMB/CIFS v1.0 runs on a Windows client as a command-line tool. XCP SMB is packaged as a single binary file that is easy to deploy and use.

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Table 2 lists the XCP features not supported.

Table 2) Features not supported.

Feature Name	Description
NFS	XCP SMB migration tool is a SMB client tool and does not support NFS protocol.
Workgroup	XCP SMB supports only if the source, destination and client are part of same domain.
IPv6	Does not support Internet Protocol version 6 (IPv6).

3 XCP Online Help

XCP provides built-in help for commands and usage. The `help` command displays a list of commands, command parameters, and a brief description of each. The command is very useful for beginners and new to the XCP data migration tool.

Syntax

```
C:\Users\Administrator\Desktop\xcp>xcp help
```

Example

```
C:\Users\Administrator\Desktop\xcp>xcp help
XCP SMB 1.1.1-ed4b037; (c) 2018 NetApp, Inc.; Licensed to Sushil Kumar [NetApp Inc] until Mon Apr
2 23:39:34 2018
usage: xcp [-h] [-version]
           {scan,show,copy,sync,verify,license,activate,help} ...

optional arguments:
  -h, --help            show this help message and exit
  -version              show program's version number and exit

XCP commands:
  {scan,show,copy,sync,verify,license,activate,help}
    scan                Read all the files in a file tree
    show                Request information from host about SMB shares
    copy                Recursively copy everything from source to target
    sync                Sync target with source
    verify              Verify that the target is the same as the source
    license             Show xcp license info
    activate            Activate a license on the current host
    help                Show help for commands
```

Parameters

Table 3 describes the `help` parameters.

Table 3) Help parameters.

Feature	Description
`xcp help <command>`	Displays examples and parameter details.

Help Details

Display details, usage, arguments, and optional arguments.

```
C:\Users\Administrator\Desktop\xcp>xcp help sync
XCP SMB 1.1.1-ed4b037; (c) 2018 NetApp, Inc.; Licensed to Sushil Kumar [NetApp Inc] until Mon Apr
2 23:39:34 2018
usage: xcp sync [-h] [-v] [-parallel <n>] [-match <filter>] [-preserve-atime]
                [-nodata] [-noatime] [-noctime] [-nomtime] [-noattrs]
```

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```
                [-noownership] [-atimewindow <float>] [-ctimewindow <float>]
                [-mtimewindow <float>] [-acl] [-fallback-user FALLBACK_USER]
                [-fallback-group FALLBACK_GROUP] [-l]
                source target
Note: ONTAP does not let a SMB client modify COMPRESSED or ENCRYPTED attributes.
XCP sync will ignore these file attributes.
positional arguments:
  source
  target
optional arguments:
  -h, --help            show this help message and exit
  -v                    increase debug verbosity
  -parallel <n>         number of concurrent processes (default: <cpu-count>)
  -match <filter>       only process files and directories that match the filter
                        (see `xcp help -match` for details)
  -preserve-atime       restore last accessed date on source
  -nodata               do not check data
  -noatime              do not check file access time
  -noctime              do not check file creation time
  -nomtime              do not check file modification time
  -noattrs              do not check attributes
  -noownership          do not check ownership
  -atimewindow <float>  acceptable access time difference in seconds
  -ctimewindow <float>  acceptable creation time difference in seconds
  -mtimewindow <float>  acceptable modification time difference in seconds
  -acl                  copy security information
  -fallback-user FALLBACK_USER
                        a user on the target machine to receive the permissions of local (non-
domain) source machine users (eg. domain\administrator)
  -fallback-group FALLBACK_GROUP
                        a group on the target machine to receive the permissions of local (non-
domain) source machine groups (eg. domain\administrators)
  -l                    increase output detail
C:\Users\Administrator\Desktop\xcp>
```

3.1 Feedback and Support

NetApp provides customers access to the NetApp XCP tool free of charge. Engineering support is currently offered to the extent the necessary resources are reasonably available, as determined by NetApp, for so long as the tool is generally available for download through the NetApp Support site. This means that, while the XCP tool team has a vested interest in addressing issues and questions in a timely manner, there are no guaranteed response or resolution times or specific associated service-level commitments.

Here are the additional details that better describe when and how NetApp provides support:

- Business hour support for this engineering-supported tool during business hours Central European Time (CET or UTC +1) Mondays through Fridays.
- Any questions/issues with XCP or feedback, contact the XCP support team directly through e-mail here: ng-xcp-support@netapp.com.

For additional information regarding XCP, refer to the NetApp XCP portal: http://xcp.netapp.com

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